



Lloyd Memorial High School

Energy Conservation Project 2018-19

Can I Get A Watt Watt? – Year5

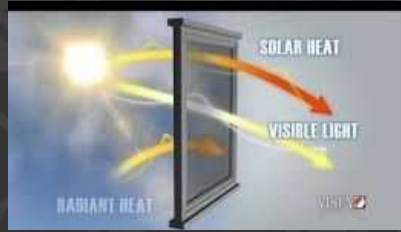
Melissa Stolz



In our fifth year, we were driven to continue to educate our students and staff along with our community about energy conservation by hosting and presenting fun outreach activities for students and the community, posting environmental education materials throughout our neighborhoods, and partnering with organizations to participate in regional environmental impactful events. In addition, we continued working in our community garden and opened a nature trail for our district which we featured at a community block party. We partnered with the middle school energy club for a school-wide family STEM Outreach. We also mentored our elementary school energy clubs through an Earth Day Celebration for students and families and conducted a Science of Energy Tour for 4th graders. We continued our district-wide initiative to collect plastic to build “Buddy Benches” for each of our schools. In our building, we implemented an Idling Cessation Awareness program for district families. We used upcycled materials to create gifts, and we inventoried our chemical storage areas to ensure safe working environment. We also installed energy conserving window treatments in classrooms following the approval of our thermal energy studies.

Our 5 Goals

1. Reduce the amount of energy used at Lloyd.
2. Partner with middle school students to educate others about conserving energy.
3. Reduce energy waste when producing raw materials by promoting recycling.
4. Increase energy awareness and conservation practices in our own community.
5. Provide energy conservation mentoring to elementary schools.



Goal 1 – Reduce the amount of energy used at Lloyd

Activity: After inventorying four classrooms in which energy loss had been reported as being significant, interviewing teachers, taking pictures, researching, and creating potential solutions based on cost-benefit analysis, we installed window film treatments on 30 classroom windows.

Energy Content & Resources: District Energy Manager visited and shared information, consulted with our administrators and district facilities managers. NEED Energy Info books, Duke Energy kit ideas for potential solutions

[Click here for our Energy Loss Post Survey](#)

Student Leadership:

Students were divided into groups to inventory, interview, and research solutions for individual teacher classrooms, then placed in teams to clean windows and install the film..

valuation:

We found a significant amount of thermal energy transfer because of old windows in classrooms, which has now been reduced. Teachers felt this loss of energy impacted student learning capability and are seeing positive impact.. Staff and students report positive feedback regarding changes as a result of our recommendations.

[Click here for Faculty Energy Survey!](#)

Goal 1 - Reduce the amount of energy used at Lloyd

Activities: Energy Superstars Patrol Contest was promoted, and monitored.

- Energy Superstars Breakfast was hosted for faculty who have demonstrated shut-down practices regularly.
- We created a checklist for staff members for the entire district to direct them into how to properly shutdown their classrooms for long breaks in order to conserve energy and distributed them just before long breaks.
- We created announcements for students and staff to provide them with Energy Saving tips at the beginning of the day.

Energy Content and Resources: We got our chart from Saving Energy at home and school teacher guide and online energy inventories

Student Leadership: Completed monthly after school patrols to provide feedback and track compliance in all rooms. Read announcements, cooked and served breakfast for the Superstar teachers

Evaluation: We will continue monitoring light usage around the building. Teachers are continuing shutting their classrooms down completely at 94.2% compliance. We will survey teachers at the end of the year, Last year's similar efforts indicated increased awareness and positive feedback. Even though more of our building is being used for the open preschool area now, our conservation efforts have allowed us to use the same amount of energy for a much larger space.

Classroom Checklist BEFORE Leaving for Break!

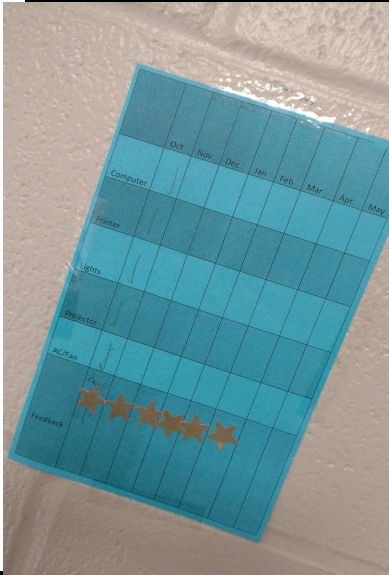
Brought to you by the LMHS Energy Club



- ✓ Unplug all small appliances – microwaves, mini-fridges, coffee makers, etc. Please take these home over the break, per Dr. Burkhardt's emailed instructions! Don't forget to unplug your electric pencil sharpeners & Glade plug-ins as well.
- ✓ Unplug ALL computers, monitors, and projectors, as well as tvs – just turning them off still leaves a phantom plug-load.
- ✓ Make sure all windows are closed and locked and alert Ms. Stolz if there are significant drafts.
- ✓ Ensure all lights are turned off – closets, under cupboards, desk lamps, etc.
- ✓ Turn off all fans/heaters and any radios.

On a side note, don't forget to take your class pets home, too! 😊

Be a Jugg, Please Unplug!!!



Goal 2 - Partner with middle school energy club to educate others about conserving energy

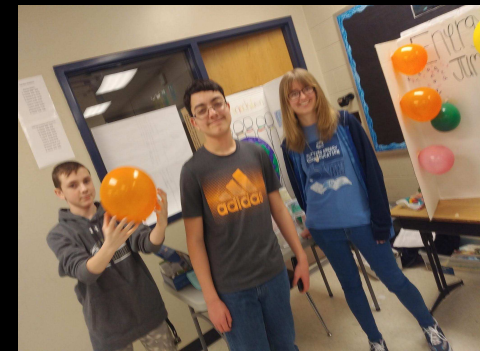
Activities:

- We presented the N.E.E.D energy carnival curriculum and the Science of Energy stations by partnering with our middle school to participate in a school-wide family STEM Night.

Energy Content and Resources: NEED Energy Carnival Curriculum & Science of Energy

Student Leadership: We gathered supplies, created the games, ran the games and taught the younger kids about energy conservation and usage. We also cheered them on and encouraged them!

Evaluation: We had families complete Duke Energy Kit requests for their conservation packages. In addition, we had families complete a survey when leaving for the evening in order to assess their learning and overall experience from the evening.



Goal 2 - Partner with middle school energy club to educate others about conserving energy



Activities: Implemented Idling Cessation program for our families to encourage better practice at pickups to increase positive air quality flowing in to our building and encourage energy conservation. We also worked with the middle school to inventory their lab equipment rooms to conserve energy related to materials waste and recycling.

Energy Content and Resources: District energy manager, KY Division for Air Quality, NEED Science of Energy

Student Leadership: Students led and did EVERYTHING! We made flyers, got keychains, and created questionnaires. We went and spoke with families who were idling and told them about why turning off their engines creates better air quality AND conserves energy!

Evaluation: We found that the older parts of our building have high CO2 levels, especially near entrances at pickups. This is new information to share with families who are not aware. Most are very receptive when we tell them the info and our data shows that more people are choosing to turn their vehicles off during pickups in response to our efforts.

[Click here for our idling questionnaires!](#)

[Click here for our Lab Materials Inventory Survey!](#)



Goal 3 - Reduce energy use when producing raw materials by promoting recycling.

Activity

- Continued the classroom recycling program for non-paper recycling with weekly collection of plastics, metals, glasses, and cardboard.
- Held a district-wide collection of plastic lids to create a Buddy Bench and birdbath which was placed on our brand new nature trail.
- Calculated and published our contribution to reducing energy consumption by recycling as a school.
- Promoted the use of the brand new water bottle filling station to promote re-use of personal water bottles rather than consuming and then producing trash.

Energy content and Resources: <https://www.epa.gov/learn-issues/learn-about-waste>, <http://homeguides.sfgate.com/much-energy-recycling-save-79720.html>

Student Leadership: We collected the recyclables weekly, calculated how much was being saved by not going into a landfill, then determined how much energy was saved by not having to produce that plastic, aluminum, and glass. Promoted and educated recycling practices for elementary kids by working to gather materials for the bench. Promoted the use of the water-bottle filler among students.

Evaluation: We have collected 3 extra large bags a week for 30 weeks, which means we saved approximately 2,160 kWh of energy from being used to produce the raw materials from scratch! In addition, we collected over 1200 lbs of plastic lids for the buddy bench project, which we calculated to be the equivalent of saving 1200 gallons of gasoline!

PLASTIC WANTED!



The Purpose/Goal:

Laysan is excited to partner with Hilo Community and Hilo High Middle to collect recyclable plastics for the creation of a Healthy Beach for the younger children in our district.

WE NEED YOUR HELP TO COLLECT PLASTIC! Please use the attached list of acceptable and non-acceptable plastic that can be collected for our project.

Please use the list below (excluding them to collect). They may need the plastic as well from students to be deposited at the collection as you were at their or similar.

Thank you for your continued support and partnering with our Ecoligens Element students!



Did you know that an estimated eight million pounds of our plastic trash ends up in the ocean every year each year?

IDLING: Running a vehicle's engine while not in motion.

WHY IS IDLING A PROBLEM?



It harms our HEALTH.

Idling releases harmful exhaust emissions that contribute to asthma, emphysema, bronchitis, heart disease, lung cancer, and infertility.



It pollutes the ENVIRONMENT.

Idling contributes to noise pollution and annually emits 11,000,000 tons of carbon dioxide and 5,000 tons of carcinogenic particulate matter into the air.



It wastes FUEL & MONEY.

Idling consumes over 1,000,000,000 gallons of diesel fuel yearly and increases an engine's maintenance costs by over \$2,000/year.



Goal 4 - Increase energy awareness in the community

Activity: We continue the work in our community garden, harvesting corn, squash, kale, and pumpkins and sharing with our school and community at the annual Block Party by telling them how energy is used for agriculture.. In addition, we worked with hundreds of volunteers from NKY to plant trees at Reforest NKY to learn to work the soil and practice conservation. We participated in the Global Sustainability & Water Summit at Northern Kentucky University to share and learn more techniques related to energy conservation in our larger region. We also partnered with Sanitation District 1 to label storm drains and educated our neighbors about proper waste disposal - this ties to our energy goals because by having more thoughtful methods of disposal, less energy is needed for water treatment in the longrun.

Energy content and Resources: Disney Youth Service Grant for materials for the garden, Forestry Agency for Reforest NKY, World Affairs Council of Cincinnati and Northern Kentucky for support in the summit, and Sanitation District 1 materials for neighborhood distribution of materials and labels for drains

Student Leadership: We created the garden, planted the seeds, weeded, harvested, and shared the crops. We gathered the resources needed for drain marking and completed that in our community. We helped with tree planting.

Evaluation: We have created great partnerships with organizations and with our neighbors so that they can look to us for help with conservation practices regarding things like energy!

Goal 4 - Increase energy awareness in the community

[Click here for the presentation on our Environmental Learning Trail](#)

Activity: We installed a district energy trail on our campus and opened it for the public at our annual district Block Party. This trail is designed for preschool and elementary school families to walk through at any time. We have created activities to be done at each of five stations and purchased materials to be used in a kit with each station. One of the stations is all about energy use and conservation - we use solar panels and wind turbines for this area.

Energy content and Resources: Project Learning Tree, KUPEE Environmental Education Grant for materials for the trail, Boyscout troop for installation of signs on wooden posts

Student Leadership: We researched the information we wanted to include in each of the five stations. For data, we had classes at Lloyd run experiments and test to gather information. Then we created the signs, selected our materials for purchase, and presented the ideas to the preschool teachers and county librarians for feedback. We created fun activities for our preschool students to complete at each of the stations. When we take students and their families on the nature trail, we present the information to them.

Evaluation: kids are surveyed before and after and show an knowledge increase!





Goal 4 - Increase energy awareness and conservation practices in our community

Activity: We hosted a Community Earth Day Celebration Evening to screen Disney's "Earth" and provide energy education to our neighbors while also supplying trees, LED bulbs, and energy monitors and signing families up for energy conversion kits. Students shared information about each piece of the Duke Energy kits through hands-on displays they created.

Energy Content & Resources: NEED Science of Energy and Energy Carnival, popcorn donated from movie theater, guests from agencies came to present, Taking Root helped with the tree seedling giveaway.

Student Leadership: We gave away trees, upcycled crafts, and provided energy demonstrations. We also helped the Conservation District and Forestry Council to provide information to families.

Evaluation: A survey was given before and after the film about energy awareness. Dozens of families signed up for the energy kits. We will be doing this event again on April 23rd and include a screening of "March of the Penguins". During the event, the team will present information along stations on our brand new nature trail and will join with the Arboretum on Wheels to provide even more conservation information regarding forests.

Goal 5 - Provide mentoring in the elementary schools

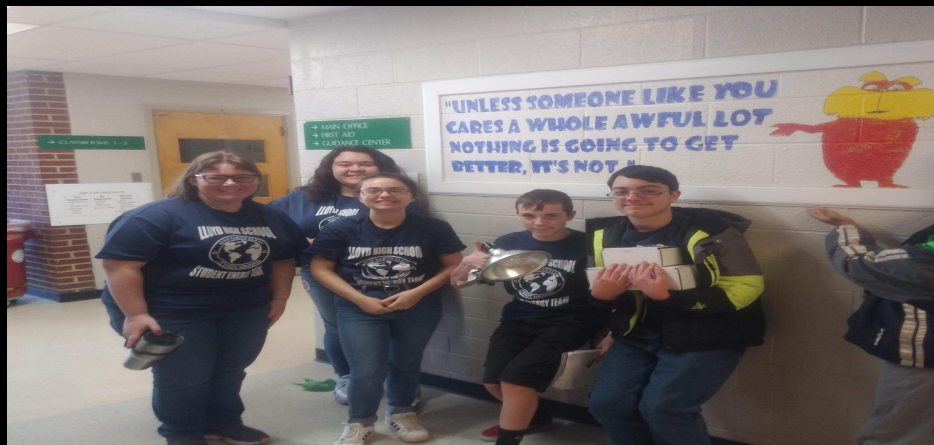


Activity: We spent a day visiting our four district elementary schools to teach the 4th graders about energy transformations using demonstrations and hands on activities in our Energy Tour of Elementary Schools.

Energy content and Resources: NEED Science of Energy curriculum,

Student Leadership: We each took a group for the Energy Tour of Schools to present the booths of energy transformation and provide demonstrations.

Evaluation: The fourth grade teachers assessed their students before and after our Tour of Schools and saw a significant increase in understanding about energy sources and transfer.



2018 District Family Earth Day Celebration

6-7:30 pm April 18th

Lloyd Memorial High School Commons



Games & Prizes
Upcycled Crafts
Free Snacks, Drawings, & Door Prizes
Tree Seedling Give-away

*Extra credit for Integrated
Science students who bring a
family member!*

Conservation Tips and Tricks from Duke Energy
Presentation of Community Environmental Health from the Conservation District
Science Demos from District Student Energy Teams



Special Screening of selections for DisneyNature's "Earth"
Come Join Us for a Fun Evening for the WHOLE FAMILY!

